INSIDE HIGHER ED

Teaching With Technology

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While higher education has always been focused on student success, we are entering a time of transition even around this longtime metric. In a recent study, 98% of college & university presidents think that change is needed in education. And 67% think the change needs to be disruptive (Chronicle of Higher Ed study from 2014). The definition of student success is broadening with a necessary focus on learner-desired outcomes beyond our traditional institutional success measures of progress and completion. Schools have to be focused on demonstration of applied learning and career development in a way they have not before.

There are also increasing pressures from the public policy arena, where we see increasing adoption of performance-based funding measures across the country and federal goals on affordability and employability. From our perspective at Blackboard, as a company that has been squarely focused on education for the past 18 years, one of the most interesting changes we see today is coming from the learners themselves.

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At Blackboard we are working with over 2700 institutions in North America. We are embracing these changes through a new commitment to learner centric design in our products and services. We are launching an innovative new user experience in our flagship Learning Solutions and working closely on best practices in leveraging analytics to drive learner success and completion. We aren't stopping there. We have just announced a strategic partnership with Achieving The Dream and have been working with the American Council on Education for over a year on competency-based learning initiatives and research. We are working with systems like the University of Louisiana on learner centric technology that will help them meet their goals in workforce alignment and student success. It is a very exciting time for Higher Education and as a company we share the commitment and promise to be partners with the industry as we all re-imagine education together.

Please visit us at www.blackboard.com.

Sincerely,

Katie Blot

Senior Vice President, Corporate Strategy and Industry Relations

INTRODUCTION

The use of technology to deliver instruction is an idea whose time has come – though the extent of its use varies greatly. At some institutions, professors do little more than use learning management systems to record attendance and grades and to communicate with students. At the other end of the scale, millions of students study entirely online.

For the great middle, though, professors are increasingly using their LMS and other technology tools to do things that don't simply replace paperwork. They are bringing together students from across the country or around the world. They are "flipping the classroom" and using class time for group work or student presentations, rather than for lecture. They are using simulations, videos and an ever-growing list of tools. And they are doing so in courses that are entirely online, entirely in person and in hybrid formats.

As students, faculty members, and institutions evaluate various approaches to teaching with technology, tough questions are being asked about effectiveness. Not only do colleges look for efficiencies and cost savings, but they want to see demonstrable impact on retention and completion rates. With colleges facing more and more pressure on those statistics, choices about technology strategies matter more than ever.

The articles in this compilation show a range of strategies used by very different kinds of institutions, and with varying degrees of success. There are no silver bullets, but there are lots of promising experiments.

Inside Higher Ed will continue to track these issues and we welcome your reactions to these articles and your suggestions for other areas of coverage.

--The Editors

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A FLEXIBLE FUTURE

By Carl Straumsheim

Elite research universities, which have been leaders in exporting modular courses and resources to other colleges, are considering using them at their own campuses.

Some of the country's most rigorous research universities have a new obsession: flexibility. As the institutions contemplate a more modular future, experiments with blended learning may provide an early glimpse at their plans.

Through strategic visions and partnerships, institutions such as Duke and Harvard Universities and the Georgia and Massachusetts Institutes of Technology are laying the groundwork for curriculums that will be delivered through a combination of face-to-face instruction, blended courses and distance education. A common goal is to offer students "flexibility" -- a word several administrators used to summarize their institutions' aspirations.

The word has many definitions. For one institution, flexibility means giving students the freedom to race through core concepts on their own schedule, freeing up face-to-face time for more in-depth work; for another, it means giving students the opportunity to continue their studies whether they are on campus or not -- and beyond graduation.

Many of the universities exploring these options were leaders of the movement to create massive open online courses or open course materials that could be used to teach students at institutions other than their own. Now these universities are exploring how they can become more flexible to find multiple uses for the same content, including teaching their own students.

Regardless of the definition, flexibility has much in common with MIT's plans to "modularize" education -- breaking courses down into smaller modules that can be taken on their own or shuffled and rearranged into a more personalized experience. In a preliminary report released in 2013, MIT toyed with the idea of "unbundling education and blurring boundaries" -- combining distance and in-person instruction to the point where students could one day spend as little as two years on campus.

"Achieving [those goals] will require a commitment to adopting new models of blended learning -- again emphasizing the flexibility to use different pedagogies in different settings -- and an investment in a diverse and flexible range of spaces that cater to different formats of learning," the report reads.

"I would be surprised if elite schools didn't move somewhat in that direction," said Lynne O'Brien, associate vice provost for digital and online initiatives at Duke. "Once one or two schools set forth in that space, others will follow."

Aspirations and Experiments

MIT's plans are part of "everybody's thought processes," said Nelson C. Baker, dean of professional education at Georgia Tech, who joked that MIT may have peeked at his institution's

Lynne O'Brien & Nelson Baker

own strategic plan.

"The most exciting thing in the last couple of years is the changing landscape ... of how research universities are talking about pedagogy and learning as a fundamental core tenet of the university," Baker said. "If technology, if distance, if online had some role to change that conversation, home run."

Georgia Tech's ideas include creating a "continuum of learning," Baker said. In the future, graduates of the university may be able to return for "short bursts" to apply new concepts to the degrees they earned years or decades earlier.

Exactly how graduates would return and for how long is still up in the air -- which is why Baker described the idea as an "aspiration" rather than a plan.

Administrators at the other institutions also qualified their remarks with similar disclaimers, offering visions of the future of their universities, then pulling back to say those visions are still "conversations" or "ideas." Their restraint reflects the fact that many of the universities' experiments are still in their infancy. Of all the courses Georgia Tech offers, for example, only a "small percentage" are run as blended courses, Baker said.

For now, the universities are encouraging their faculty to experiment with course delivery methods and materials to see which projects pan out.

Harvard, for example, has 47 projects (including some reruns of massive open online courses and content available on demand) planned to run in the 2014-15 academic year, said Peter K. Bol, the university's vice provost for advances in learning. In November, the university approved yet another experiment: The popular computer science course CS50 will in fall 2015 be streamed to Yale University, where students will be able to take a version of the course for credit. As expected, the announcement has drawn plenty of snarky remarks about the universities' rivalry.

Of the various experiments in the works, Bol rated modularization as the most important, and said HarvardX, the university's branch of the MOOC provider edX, plays an "important role" in that initiative. In 2013, faculty for the first time used content created for MOOCs in blended courses on campus, and students generally thought those courses were of higher quality than traditional courses, he said.

> "GIVEN THAT FREEDOM, FACULTY HAVE STARTED SAYING 'MY 14-WEEK COURSE WOULD BE BETTER AS THREE FOUR-WEEK COURSES."

"This will become ever more a part of lecturing," Bol said, though he, too, described the plans as a work in progress. "We're a couple of years out, but we're on the right path."

Duke is doing similar experiments with Coursera. The university was an early partner of the massive open online course provider, and its faculty members have since 2012 produced dozens of MOOCs -- including by some who have voiced their skepticism about the platform. O'Brien said faculty members have taken advantage of the partnership to create courses without having to worry about federal regulations governing financial aid or awarding students academic credit.

"Given that freedom, faculty have started saying, 'My 14-week course would be better as three four-week courses,'" O'Brien said. "Should there be some [courses] that are broken in half so students can take the half they need? Maybe some of them can do a quick course on the most critical content, but then do a much more in-depth experience with mentored research or a lab or service learning -- the kind of thing you can really only do on campus and face-to-face."

She added, "We've already seen people do those sorts of experiments with flexibility, and so we're having a conversation now about whether there should be more actual options within the curriculum for people to learn things at different speeds or with different blends of courses."

O'Brien said the interest in online education has come a long way since the Duke faculty in 2013 voted to pull out of 2U's Semester Online consortium -- in part over granting students academic credit for fully online courses.

"I think we're in a different place than we were before," O'Brien said. "We don't have a lot of concrete curricular changes yet -- it's more a sense that these conversations are under way."

Blended, Not Distance

While Duke, Harvard, Georgia Tech and MIT are all exploring modularization and blended learning, the former two are so far more hesitant about fully online education. Bol said there are faculty members at Harvard talking about distance education, but that there is "no interest" in reducing the time students spend on campus.

For the summers of 2013 and 2014, Duke offered a handful of fully online courses, mostly targeting students who physically could not be on campus. Asked if the university had plans to expand those course offerings to the fall and spring semesters, O'Brien said she believed faculty would likely vote against such a proposal.

"Our faculty control the curriculum, they control the classroom, and they're going to make decisions about how they want to teach," O'Brien said. "That's not going to change."

Baker, however, said many students are doing so voluntarily, even though their universities aren't endorsing the idea. Many freshmen arrive with enough college credit to nearly be considered sophomores, he said, and about 40 percent of Georgia Tech's students enroll in an international program.

"The truth of the matter is we're approaching it if we view it through those lenses," Baker said. "If we were to really look at the data of what residential students are doing, we may be closer than we realize to already being in those kinds of roles." ■

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LICENSE TO TEACH

By Carl Straumsheim

Saint Mary's College of California introduces a "Digital Driver's License" for faculty members teaching online. It may become a requirement for teaching in its business school.

If you want to teach an online course in the Saint Mary's College of California business school in a few years, you'd better get your license. The School of Economics and Business Administration will soon require its faculty members to be certified to teach online -- if they want to teach at all.

Faculty who enroll in the program, which launched in November 2104, will come away one quarter later with what the business school calls a "Digital Driver's License." The program will teach them how to use screen capture, podcasting, voice grading and other technologies in their classrooms, but most importantly, it will help them become self-sufficient online instructors, said Barry Eckhouse, the professor behind the idea.

"It's not going to happen on its own," Eckhouse, the business school's director of technology and online programs, said. "It struck me that without something systematic in place that would certify as much as possible that our faculty who go into these online environments are prepared ... we would have no reason to believe they're going to be able to do a good job."

The business school will certify 34 faculty members from 2014 through 2016 -- six per quarter. Before those two years are up, Eckhouse said, he believes all of the school's programs will have been hybridized, meaning half of the instruction will be delivered online, the other half face-to-face. That effectively means faculty members need to have earned their license if they want to teach at all. A university spokesman said hybridizing every program is Eckhouse's personal prediction, and that it "is not the plan of the administration."

"In another year or so, they're not going to have a choice of teaching online or not," Eckhouse said. "They're either going to teach online or not at all. That's where we're going, for better and worse."

The business school is investing in a service many faculty members nationwide believe is going underfunded -- if it exists at all. As more colleges and universities expand their hybrid and distance education offerings, training faculty to teach students not physically in the classroom -- and to use the technologies that will enable that form of delivery -- will continue to rise in importance. Although most professors are satisfied with the development and training programs their institutions offer today, a recent Inside Higher Ed survey suggests they feel campus IT offices need more resources to prepare instructors for those challenges.

Saint Mary's, like many institutions in California, is "maxed out," Eckhouse said. The college physically can't fit any more students on its campus, which is located about 30 minutes outside San Francisco. To alleviate its growing pains, the business school in 2006 began to flip its programs,

reducing the time spent in the classroom.

"I think there are a lot of institutions in this very position where they need to grow but there's no space to grow -- in a traditional sense," Eckhouse said. "It's hard stacking buildings on top of buildings or digging underneath them. [Hybridizing programs] seems to be a good solution to an otherwise pretty difficult challenge."

The business school decided to flip some of its programs after seeing course evaluations, Eckhouse said. Not only do the hybrid programs give the school room to grow, but students have also rated courses with faculty-produced digital resources more highly than face-to-face courses. By requiring faculty members to be certified before they teach hybrid courses, the school hopes to standardize that experience.

"Because the growth has been so rapid, I don't think that we really had a chance to look at how well our faculty are prepared to teach in this relatively new environment -- relatively new to a lot of them," Eckhouse said. "The idea is to take what some of our faculty have done very, very well and ensure as much as we can that that applies to every class experience."

The requirement is also motivated by competition, said Zhan Li, dean of the business school. The landscape of online business education -- particularly M.B.A. programs -- is growing more diverse as institutions market their programs to students looking for a specific type of program. Saint Mary's, Li said, will emphasize its mission as a teaching college.

"Saint Mary's has been known for teaching excellence in a face-to-face fashion for 150 years," Li said. "We want to deliver high-quality teaching both online and face-to-face, and for that to happen our faculty have to have the right skills and capabilities."

The business school could have signed its faculty members up for any one of the number of online teaching certification programs available online. Instead Eckhouse was able to secure funding for a new digital media center, housed in the business school, so the program could be managed in-house. "I think if we decided to make it a peripheral option, it would be considered as having peripheral importance," he said.

Eckhouse and Li acknowledged the response to the new requirement has been mixed, but they also pointed out that some faculty members had to be turned away from one session. "We would not be living in a university environment if we didn't have different opinions," Li said.

The business school is at least offering an incentive. Although faculty members won't be able to get certified in lieu of teaching a course, they will receive a stipend equivalent to a half-course overload, Eckhouse said. "The compensation is more symbolic, and I think it's important," he said. "It says the college thinks it's significant, and we're prepared to pay you for your time to become proficient." ▪

ROOM TO EXPERIMENT

By Carl Straumsheim

Can active learning techniques and flexible classroom seating improve student outcomes? Research at Ball State University has produced mixed results.

Ball State University is using active learning, multimedia-enabled classrooms and swivel chairs to put a new spin on its faculty development efforts.

The university earlier this decade renovated its Teachers College building, creating two classrooms it calls Interactive Learning Spaces. The rooms are part of a larger faculty development program intended to promote active learning techniques and cut down on lecturing. As the program has expanded, the university is studying whether teaching at-risk students -- those withdrawing from or earning a D or F in a basic math course -- in the classrooms could improve academic outcomes and, eventually, graduation rates.

"Universities obviously are all going through the same difficult financial straits, and for a university that is considered mid-major like Ball State, [creating experimental classrooms] is a financial strain," said Gary M. Pavlechko, director of teaching technology in the office of educational excellence. "We know that we're in competition with other schools not only in Indiana but here in the Midwest. How do we set ourselves apart? In our case, by the development of these interactive learning space classrooms, we are demonstrating to everyone that we are committed to the concept of faculty development."

Both classrooms seat 24 students but use different layouts. One room has students create groups of six around tables with flat screens that allow students to hook up their devices and quickly share content with others. Another consists of swivel chairs with built-in desks that enable students to roll around the classroom and form groups on the fly. Both rooms also lack a logical "front," so faculty members are encouraged to walk among students as they work together.

Ball State's initiative may sound like the in-class part of a flipped course, but none of the instruction in the courses is actually moved outside the classroom. Instead, the university hopes changing the way the instruction is delivered will encourage students to be more engaged and therefore make them more likely to perform well.

Pavlechko described the two spaces as "intake classrooms" -- faculty members who work in the development program are required to teach in them for two semesters. By the end of the 2014-15 academic year, the classrooms will have hosted 68 faculty members representing 29 of the university's 48 departments and more than 3,500 students.

In the fall of 2015, Ball State will expand the program and open a 40-seat and a 72-seat room so faculty members teaching larger classes -- such as an introductory psychology course -- can use the new facilities. The university plans to spend about $230,000 on those spaces, excluding construction costs. The two smaller classrooms averaged about $90,000,

Pavlechko said.

"We're just lucky that we have that type of administrative support that understands how you sustain a program like ours and where it's going to make a significant difference over an extended period of time," Pavlechko said. "We are not one-workshop wonders or of that belief."

The classrooms have also given researchers at Ball State an opportunity to test the effect of different pedagogies, but whether the classrooms actually improve student outcomes is still unsettled.

"We actually found a fairly moderate to strong correlation between what they think of these areas and if they think they have the ability to get a higher grade -- or their motivation to attend class and also their engagement in class," said Jim Jones, director of the office of research and academic effectiveness. "When we try to get more to the heart of it, we're getting more mixed results."

Steelcase, the office furniture provider Ball State worked with on the new classrooms, has produced similar results. The company has surveyed hundreds of students and faculty members at the universities it has worked with, and says it has found a statistically significant correlation between classroom configuration and student engagement. The survey doesn't include any academic results.

Students at Ball State believed they were more likely to attend class, engage with their classmates and finish with better grades, but their academic results haven't necessarily matched their enthusiasm.

The results from students in the basic math class were the most promising. After controlling for demographics and academic backgrounds, researchers found at-risk students who took the course in classrooms that promoted active learning (which included some rooms other than the renovated ones) were 2.8 times more likely to succeed -- that is, to earn a grade higher than a D -- than were students in traditional classrooms.

While those results suggest at-risk students may benefit from that new classrooms, other tests have produced less conclusive results. In one early pilot test, students attending classes in the renovated classrooms performed 0.19 points of a letter grade better than students in traditional classrooms. When the pilot later expanded to 24 sections -- 12 in the new classrooms, 12

in the old -- "the overall results on grades kind of canceled each other out," Jones said.

In many of the comparisons, Jones said, students in the classrooms that promoted active learning earned grades that on average were about 0.2 points of a letter grade higher, but some "really weird extremes" on both ends of the scale made it difficult to draw any conclusions. The researchers suspect individual faculty members or a small sample size may be to blame, and hope more data will clear it up.

"Perception-wise, students are telling us 'I can do better when I'm in these spaces,' " Jones said. "Maybe that's enough of a win?" ■

SOUTHERN BLEND

By Carl Straumsheim

Can a group of liberal arts colleges in the South -- institutions that value personal interaction -- win over faculty on blended learning?

After three years of experimenting with blended learning, leaders of the Associated Colleges of the South feel a movement is growing, but they aren't sure if the push will last.

The association, which consists of 16 liberal arts institutions across 12 Southern states, made blended learning one of its formal programs in the fall of 2011. With support from the Andrew W. Mellon, Robert W. Woodruff and Teagle Foundations, the program has awarded more than $200,000 over the last three years to fund 42 experiments that include flipped classrooms, digital humanities and content from massive open online courses.

The association's goal, as outlined in a set of upcoming reports, is to create a different kind of model for blended learning -- defined as "computer-mediated instruction that is combined with the interpersonal and interactive pedagogy that distinguishes the ACS institutions."

In simpler terms, that means a form of blended learning that won't alienate faculty members who value the defining characteristics of a liberal arts college -- not just the curriculum, but the close student-faculty interaction. While larger universities may pursue blended learning to reduce classroom time, that same idea would be considered anathema at many of the association's member institutions.

"We're taking an approach that enhances what we do best, and certainly what we do best are those connections between faculty and students," said Melanie L. Styers, assistant professor of biology at Birmingham-Southern College. "We like the small classroom ... and we're trying to use blended learning to build on that by engaging our students in even more ways -- as opposed to taking away from how we engage students."

In a progress report to the Teagle Foundation, the association is frank about the challenges of convincing faculty members that blended learning can work well at liberal arts colleges.

"[M]any faculty regard blended learning with suspicion or even outright distaste," the report reads. "Yet if blended learning can be described in terms of successful projects that illustrate the ways in which technology can enrich the learning experience and

increase what students learn, most faculty members quickly become enthusiastic and thoughtful participants in the conversation."

Compared to the association's other initiatives, including programs on diversity, gender studies and sustainability, among others, it is "probably fair to say" that blended learning has been a tougher sell, said Amanda Hagood, who directs the program.

"You really need to get faculty talking to other faculty, and you need for some faculty to demonstrate the viability -- even the kind of richness -- that can be introduced when you bring technology into the classroom," Hagood said in an interview. "We can repeat it all day long and cite studies and so on, but unless faculty are hearing it from other faculty, I'm not sure if the leap of faith is going to be made."

As the program moves beyond its experimental phase, the association is ramping up its communication efforts to encourage more faculty members to apply.

The Teagle report, for example, includes blurbs from faculty members who received grants during the 2012-13 academic year, whose projects range from well-intended but flawed to promising. On one hand, a math instructor at Trinity University, in Texas, used online grading in calculus courses and saw improved student performance, while on the other hand, faculty members at Birmingham-Southern College used games and simulations in an interim-term course, though "not all of these experiments were completely successful."

"At least for this phase of our program, experimentation has really been the name of the game,"

Hagood said. “We wanted to put resources into the hands of our faculty and staff, let them try things and report back to us. Where we’ll be heading next will probably be in the direction of assessment.”

The report also mentions “a noticeable shift in the caliber and quantity of projects proposed,” including a move toward more cooperation between faculty members at different institutions. The association has to some extent sought to promote such behavior, awarding larger grants to projects that involve collaboration between two or more institutions.

Flipping the classroom has been an early favorite among faculty members, including for Maha Zewail-Foote, professor of chemistry at Southwestern University, who in 2013 flipped her general chemistry course.

“I can’t go back to the way it used to be,” Zewail-Foote said. “I can’t just stand in front of a class and talk to them for 50 minutes. Once you do this, you’re like ‘Oh my gosh, all my classes have to change!’ ”

Zewail-Foote used part of her grant to hire a student to explore the apps needed to flip the classroom, which presents one of the constraints of blended learning at small liberal arts colleges: limited support structures. Birmingham-Southern, for example, is looking to increase its number of instructional technologists. The college now has one.

“We are finding that, for many of these projects, you do need a very consistent level of IT support that may drop off in future years,” Hagood said. The association is attempting to address that issue by funding workshops and working with chief information officers, she said.

The association is also encouraging faculty members to form teams with IT staffers and librarians -- at their own institutions and across the consortium -- to assist one another.

“These rich, collaborative project-based ‘teams’ can make truly amazing teaching work possible and are particularly well suited for the liberal arts environment,” Hagood writes in an introduction to the case studies, which she shared with Inside Higher Ed. “Looking for ways to sustain these fruitful exchanges is particularly challenging and particularly important, and will likely become more so in future years.” ■

TEACHING WITH TECH ACROSS BORDERS

By Elizabeth Redden

As colleges look for low-cost ways to globalize the on-campus learning experience, there’s increasing interest in using the Internet to connect with international classrooms.

For his world regional geography class at Allegheny College in fall 2013, Eric Pallant arranged for his students to videoconference with a class at Forman Christian College, an English-medium institution in Pakistan. It was Pallant’s second such experience teaching a “globally connected” course: the spring before he had taught a class on food and agriculture in

collaboration with a professor at Morocco's Al Akhawayn University.

Among the assignments Pallant had planned for the geography class, the Allegheny students were to prepare detailed reports on the physical and human geography of their town, Meadville, Penn., while the Pakistani students would do the same for their country. The two classes would exchange and present on their respective findings.

It sounds simple enough, but the reality was anything but. Anti-American sentiment runs strong in Pakistan and within minutes of the start of the first video conference the Allegheny students felt under attack for U.S. foreign policy decisions of which they knew little. ("Are you keeping track of debt restructuring in Pakistan right now?" Pallant asked.)

Further, the video picture was fuzzy and the sound quality poor, a problem compounded by the issue of accents.

And though this was less of a problem for the Pakistani exchange, in the case of the Moroccan course collaboration Pallant's students faced challenges related to different cultural conceptions of time. The American students were anxious about getting the group assignments done by the stated time on the syllabus, while their Moroccan group-mates tended to have a much more, well, fluid conception of deadlines.

"Lest you think this is all negative, what I ended up realizing and saying to my students is, 'You're going to go out there in this globalized world and you need to learn how to negotiate these things' – a different sense of time, accents, technology that doesn't work the way you expect it to, perceptions of Americans overseas," said Pallant, the chair of environmental science at Allegheny.

In other words, "it turned out to be a fantastic learning tool," he said – though not for the reasons he had expected.

As colleges look for cost-effective ways to internationalize the on-campus learning experience, globally connected courses such as Pallant's may become more common. The use of technology to enable virtual exchanges and collaborative assignments between geographically distant classrooms is not brand-new – faculty, especially foreign language faculty, have been doing it in pockets for as long as there's been email – but there seem to be an increasing number of efforts to scale up and institutionalize these kinds of activities.

"In the last 18 months to two years, there's been the beginning I would say of a sea change where SIOs [senior international officers] and provosts and other folks who are higher up on the campus are taking notice of this for different reasons and saying, 'This is a good idea; how can we support it?' " said Jon Rubin, the director of the State University of New York's Center for Collaborative Online International Learning, which goes by the acronym COIL.

Challenges and Opportunities

This type of teaching goes by many names – COIL, online intercultural exchange, virtual exchange, globally networked learning, telecollaboration. In this context they all mean more or less the same thing, and that thing is broad: the use of technology, any technology, from email to social media sites to video-chat software to blog platforms to wikis – to facilitate class discussions and do collaborative course assignments across national borders and time zones. The course exchanges can be synchronous or asynchronous, or involve a combination of both.

COIL is often described as an alternative to study abroad, a low-cost, easy substitute of sorts for that 90 percent or so of undergraduates who never go overseas. Asked if it's oversold in that way – after all, study abroad has been characterized as a particularly high-impact educational experience – Rubin said the problem with the language of "alternative" is it suggests a COIL class would be study abroad's equal. Generally speaking it's not, he said, but that doesn't mean it's

not a potentially powerful learning opportunity in itself.

"When people ask me, 'What does a COIL course do?' I say it's less about intercultural competence than it is about intercultural awareness," Rubin said. "It's about starting a process. I believe that when handled correctly it does have a very strong tendency to do that."

That said, he continued, "If there's any area where I feel it is oversold it's that it's not that easy to set up these courses. It takes quite a bit of effort and it's not just that it takes work for our faculty but it means engaging faculty abroad who similarly have the commitment and the time and the administrative support if it's going to be sustainable."

Indeed, a recent European Union-funded report on telecollaboration in language learning found that while 93 percent of survey respondents who had used online intercultural exchange in their classrooms described it as a positive experience, they also described it as time-consuming (83 percent) and difficult to organize (54 percent). Thirty-one percent of respondents described it as challenging to find a reliable partner class – though, interestingly, 45 percent did not – and 55 percent said collaborating with partner professors was challenging. (The group behind the EU report has developed a website designed to help interested faculty find partners and teaching resources.)

Other practical challenges cited by survey respondents included

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differences in academic timetables and in language proficiency levels (outside of foreign language classes, most of these types of collaborations are conducted in English), and a lack of institutional support.

The issue of institutional support -- such as assistance from an instructional designer and/or an information technology expert -- comes up frequently in discussions about COIL (or whatever else it's called). After participating in a National Endowment for the Humanities-funded institute hosted by the SUNY COIL center, 15 of the fellows said they wouldn't be running a second iteration of the COIL course they'd designed compared to just 7 who would.

Fellows cited a lack of partners and/or resources as their main reasons for why the course wouldn't be continuing while those seven who did have plans to do it again had one thing in common: they all indicated that their institutions are committed to building on the work they'd begun.

"Although COIL can be considered a low-cost cost approach to internationalization at home, it is not no-cost," the final report on the NEH institute says.

"Given the added resources these courses require, Fellows have to demonstrate how the COIL course was different from a traditional course and what added value it had. To no surprise, most cited the access to different cultural points of view as adding that 'something extra' to the course. They found that this element increased student motivation, led to more in-depth learning and helped students be more willing to see ideas, texts, works of art, etc. from different perspectives. In some ways it was as if the students felt they had to perform better because they saw their partner class as a new audience particularly during synchronous audio/video sessions and in asynchronous discussion forums."

COIL in Practice

Among the places where COIL has taken hold, within the SUNY system, the Oswego campus has provided financial incentives in the form of $3,000 stipends for faculty to develop a COIL course and $1,500 stipends to redesign an existing one. Lorrie Clemo, SUNY Oswego's provost and vice president for academic affairs, said that faculty developing COIL courses receive support from an instructional designer, from the center for teaching and learning, from a staff member in the international education office and from an information technology staff member who helps with the technology when the class is up

and running.

Asked why she's making COIL an area of emphasis, Clemo said it's a matter of scale and maximizing the number of students affected. "I do think there's tremendous potential for scaling this up so that many more students have the opportunity to experience an international connection if they aren't able to study abroad," she said.

Ulster County Community College, a two-year institution in the SUNY system, has developed a number of COIL courses, including a planned collaborative genetics class with a university in Mexico and classes on entrepreneurship in collaboration with universities in Lebanon and Brazil.

Outside of SUNY, Mount Holyoke College has a telecollaboration initiative through which about 40 faculty members have led class discussions with invited speakers or with students at universities in other countries. East Carolina University is offering 20 sections this fall of its hallmark "Global Understanding" class, created in 2003, in which students engage in group video and one-to-one chat discussions on topics like family and stereotypes and prejudices with students at three different universities in three different countries over the course of the semester. And the Great Lakes Colleges Association has so far involved about 36 faculty members in its "Global Course Connections" project connecting faculty at the various institutions in the consortium it manages, the Global Liberal Arts Alliance.

Allegheny's Pallant organized his course exchanges through the Great Lakes Colleges Association Global Course Connections project, as did Gabriele Dillmann, the Julian H. Robertson Jr. Endowed Professor at Denison University, in Ohio. Dillmann had long been looking for opportunities to connect her German language students with peers overseas, but she'd found it difficult to forge a mutually beneficial exchange between her students and students in Germany who, of course, speak German fluently and tend to speak English quite well too.

Only recently did she consider the possibility of creating connections between German language learners in two non-German speaking countries. This past fall Dillmann embarked on a collaborative class with a German professor at the American University in Bulgaria. In a series of homework assignments, students wrote emails to one another introducing themselves and their reasons for learning German and describing their home campuses. As a centerpiece of the collaboration, two students each from the two institutions met for four-person discussions on the topic of planning a trip to Bulgaria using Google+ Hangout; Dillmann received a link to the saved chat and assessed the Denison students using a rubric including not only linguistic skills but also skills like digital etiquette and group and leadership competencies.

For the next iteration of the course, Dillmann said, she and her colleague at the American University in Bulgaria are expanding on the collaboration and planning synchronous class meetings using the software program Jabber. The collaboration of course creates more opportunities for her students to practice their language skills, Dillmann said, but what she also likes is that the context is less artificial than the typical language classroom.

These are students from different cultural backgrounds who are encountering one other for the first time and using German as a common language: "They are meeting each other, finding out who are you, who am I and how do you live, what is your campus like, what are your courses like?" Dillmann said. "These are all new things, and our students want to present who they are as best as they can." ■

ONE DOWN, MANY TO GO

By Carl Straumsheim

Georgia Tech is still putting the finishing touches on its affordable MOOC-like online master's degree, but students report a rewarding (and rigorous) first semester. However, enrollment and tuition targets may need some adjusting.

Administrators at the Georgia Institute of Technology are optimistic but "not declaring victory" after one semester of its affordable online master's degree program in computer science. While the program has been well-received by students, administrators are still striving to solve an equation that balances cost, academic quality and support services.

"We're not all the way there yet, but I couldn't ask for a much better start," Zvi Galil, dean of the College of Computing, wrote in May 2014 in an email to Georgia Tech faculty on the one-year anniversary of the program's announcement.

The initiative has been closely watched since the 2013 announcement -- and not just because of the dramatic savings it offers compared to the university's on-campus program. A three-credit-hour online course costs less than a single credit hour of face-to-face education -- $402 versus $472, based on spring 2013 tuition rates. The goal is to get much larger than a traditional program could sustain, but also much smaller than the average MOOC.

The savings gap may narrow as Georgia Tech scales the program. "We hope to be able to stick with this tuition, but whether this is the right tuition, we don't know yet," said Galil, who estimated an enrollment of a few thousand students could be enough to balance the budget.

The master's degree program also represents an important investment for Udacity, the one-time massive open online course provider that has recently gravitated toward paid certificates and corporate training.

The online computer science program also includes a corporate presence. AT&T has subsidized the program with a $2 million investment (and many students are AT&T employees), which will last the university "until we run out of it -- and we are close!" Galil said. The university is considering similar partnerships with other corporations, he added.

Georgia Tech only admitted 410 students to start this spring and capped the courses at 150 students each, which meant another 350 students who applied in fall 2013 had to wait until the summer term, which began on May 19, 2014. Galil said the university will continue to scale the program slowly, semester by semester, likely missing an early and optimistic estimate to enroll 10,000 students by the third year.

"We will not accept students just to have large numbers," Galil said. He later added, "Our philosophy is everybody that is qualified gets admitted. This is counter to the current norm in the elite universities -- the Ivies, the MITs, the Georgia Techs -- where admission is by

denial."

The buzz around the online degree program appears to have benefited the residential program as well. This year, applications were up by 30 percent, the university reported.

More students means more courses. Galil confirmed faculty are developing seven new courses, five of which will be made available this fall. At a rate of four or five new courses per semester, the course catalog will soon offer enough variety to let students to pick specializations such as interactive intelligence, machine learning and social computing, among others. And this summer, the university will offer two not-for-credit tracks.

Some students initially griped about not being able to take more than two courses, but a few weeks into the semester, most of the criticism had died down:

"[Machine learning] is a cool class that will make you want to die. You will wake in cold sweats from nightmares, and you had better have a social support structure as strong as my wife to get through it."

That's how one student described his experience on the program's unofficial community on the social network Reddit. He and 309 out of the 380 students who enrolled in spring 2014 "survived" the first semester, as Galil put it.

In the five courses offered in spring 2014, those students posted a 3.55 grade-point average. When comparing the four courses that were offered both online and on campus, the online students narrowly outperformed their residential counterparts, 3.61 to 3.58. (Sebastian Thrun, the Udacity CEO who teaches the online-only Artificial Intelligence for Robotics, must be a tough grader.)

The student, who goes by the nickname "DrCaret2" on Reddit, spoke to Inside Higher Ed on a condition of anonymity as he is still enrolled in the program. While he was full of praise for the program, saying "It is absolutely, immediately, and unquestionably clear that it is in a league of its own," he also pointed to some growing pains. Some of the assignments, he said, come with frustratingly vague instructions.

"I think that students -- myself included -- had a hard time adjusting to the vagaries of exploratory learning -- and that's been an adjustment," the student said. "A lot of students -- at least in the online program -- we've been out of school for longer than residential students have been, and it's a little different in professional settings, because bosses don't really do the Socratic lecturing thing that instructors are used to."

The average student in the online program is 34 years old; the average residential student, 23.

To help one another decipher the assignments, the students have spilled out of the official forum and into not just the Reddit community, but also a Facebook group and a Google+ page. Posts on those sites range from griping about admissions requirements and comparing impressions to discussing Yellow Jackets baseball.

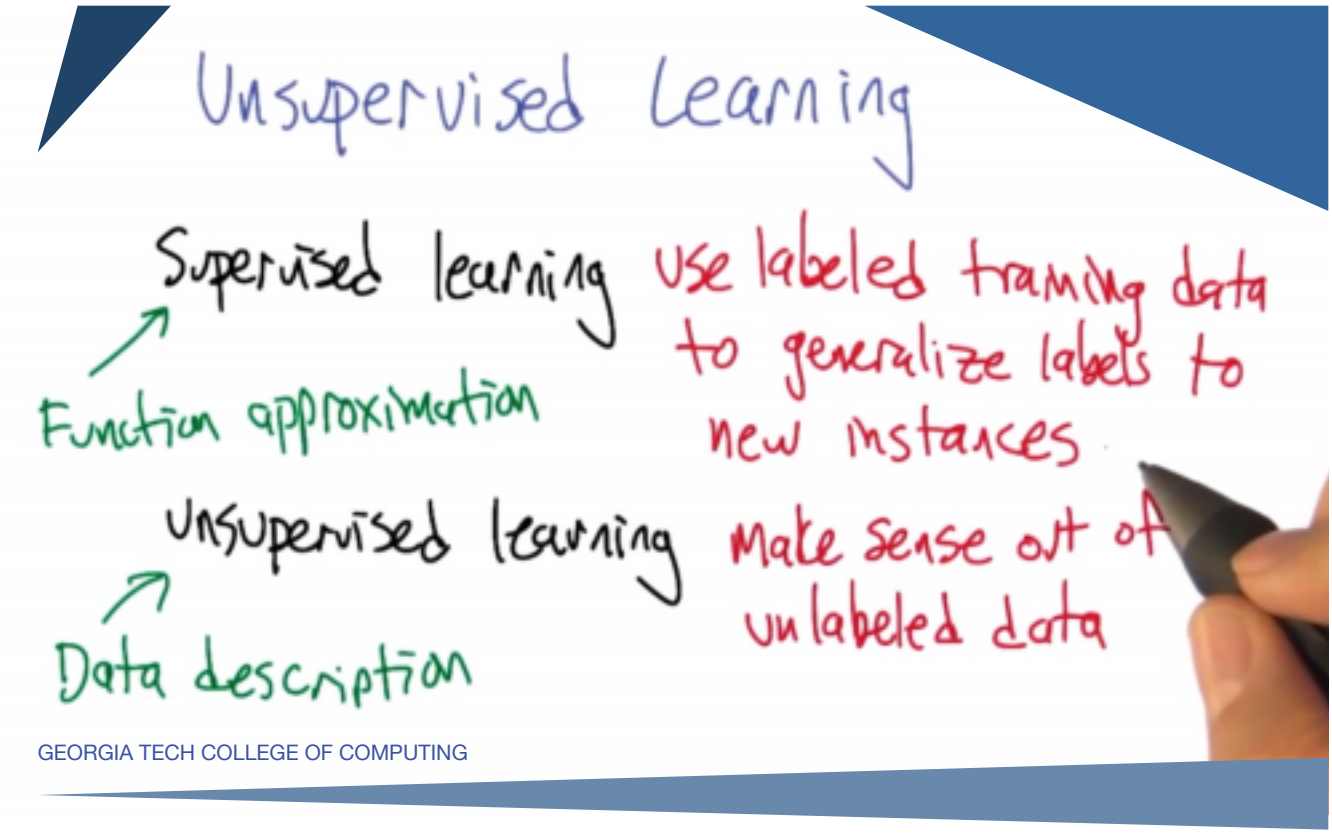
"We are thrilled to see this kind of interaction," Galil said. "One student berates the fact that it's difficult, two others jump on him and say, 'These are Georgia Tech courses.' This is much better coming from students."

Each course does come with teaching assistants -- the machine learning course had two, for example -- but they aren't available around the clock.

"While I appreciate the professor getting back to me, working ahead by 1 week should not be unexpected, and [questions] should be answered," one student tweeted.

Udacity's role in the program is largely technical -- it provides the platform and course development support, Clarissa Shen, vice president of strategic business and marketing, said in an email. The company was supposed to supply a large number of mentors to assist students, but "certain personnel roles have evolved as the program has taken shape," she wrote.

Udacity is still involved in finding teaching assistants, suggesting candidates who are then vetted by Georgia Tech. Faculty at the



university have also been able to recruit some former students. “It’s not always trivial, and it takes work to find them,” Galil said.

In addition to finding the appropriate number of teaching assistants and graders for each course, Galil said, the university is also pondering how to effectively deliver advising and career counseling. “One of the things we’ve learned is ... to manage expectations,” he said.

Those unresolved matters have yet to put a damper on student enthusiasm, however. In response to a survey, 93 percent of students said they would recommend the program, and 97 percent said it offered a “good or exceptional value” for the cost.

That percentage includes DrCaret2, who said he has been fascinated by MOOCs ever since enrolling in Sebastian Thrun’s first artificial intelligence course in 2011.

“The whole program is a big change from the usual ‘online’ classes offered by other schools,” he wrote. “Another guy at my office is taking a math class at a local school, and comparing the [machine learning] lectures is like watching high school highlight footage of Lebron James before he was drafted.” ■

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ONLINE ED DISCONNECT

By Carl Straumsheim

A survey of freshmen finds that while most high school students use online education websites on their own time, very few see fully online courses in their higher education future.

The most independent and self-motivated students entering college are more likely to expect they will take a fully online course as undergraduates, a survey released in March 2014 says, but the vast majority of students still connect higher education with the traditional residential experience.

The 2013 Freshman Survey, conducted by the University of California at Los Angeles's Cooperative Institutional Research Program, suggests that more than two-thirds, or 69.8 percent, of entering freshmen in fall 2013 are using online instructional materials such as massive open online courses and video lectures on their own time, compared to less than half, or 41.8 percent, as an assignment in a high school class.

Yet once they reach college, the expectation that fully online courses will be a part of the schedule plummets. Less than one in every 10 students in the fall 2013 freshman class at almost every type of four-year institution said there is a "very good chance" they will enroll in a fully online course. Students at private universities are least likely to think so -- only 3 percent of respondents at those institutions picked that answer -- but the interest isn't much higher at public four-year colleges, where 8 percent of students said the same.

Kevin Eagan, interim director of the institute's Cooperative Institutional Research Program, attributed the lack of interest in online courses to the specific slice of higher education -- recent high school graduates going off to college -- covered by the survey.

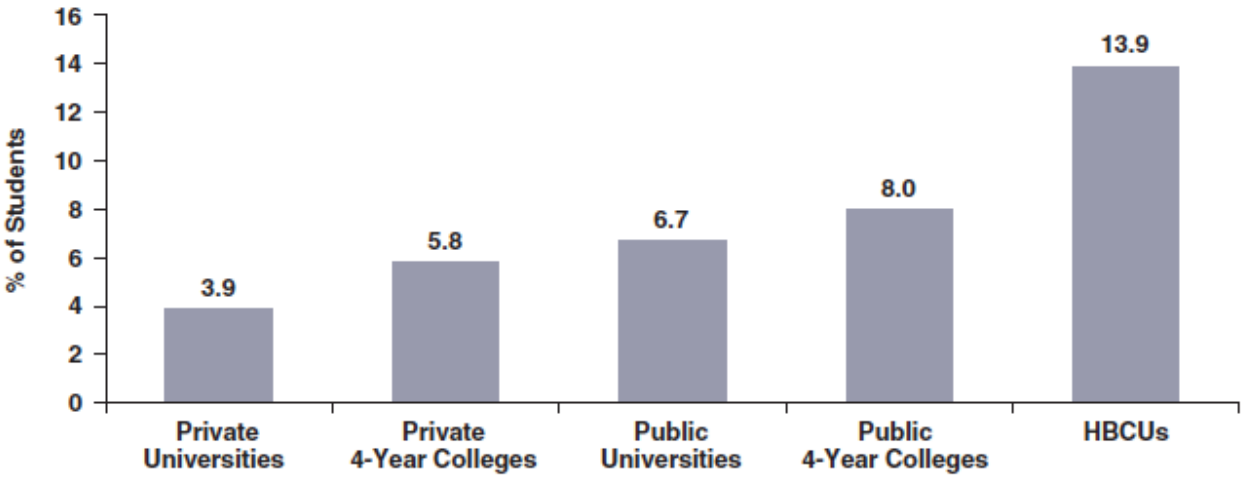
"These are the traditional-aged students who are more likely to live on campus and have an expectation of a more traditional or idealized college experience based on what they've seen on television, film and perhaps what their parents have experienced," Eagan said. "I also think that once students get into college and find that courses are impacted -- or they're capped because they are so popular ... their perceptions may change."

Oddly, students at historically black colleges and universities were most likely to think that a fully online course is in their academic future, clocking in at 13.9 percent. HBCUs have been slow to adopt online education, and Eagan said the finding "may just be an odd artifact of the data."

But Roy L. Beasley, who has previously charted the landscape of online education among HBCUs, said the numbers may be plausible. If that's the case, he said, the findings point to an even greater disconnect between student expectations and the programs HBCUs offer.

"Unfortunately, at this time and for the foreseeable future, the

Figure 6. Students' Expectations That They Will Take a Course Exclusively Online at Their Institution, by Institution Type (% Indicating "Very Good Chance")



expectations of (black) students at the 106 HBCUs, i.e., the number of online course that they would like to take, will greatly exceed the capacity of most HBCUs to deliver," Beasley said in an email.

The students most interested in fully online courses were, not surprisingly, those who frequently used online instructional materials as high school seniors. More than a quarter of those students said there was at least "some chance" they would take a fully online course in college. Those students were also more likely to "exhibit behaviors and traits associated with academic success and lifelong learning," the report states.

The 2013 edition of the survey marks the first time the CIRP has asked students about their online education habits, and Eagan said it will be interesting to see how the trends develop over time. For now, there is no trend data to explain how the growth of MOOCs and other forms of online education may have affected how students interact with academic materials online.

"Colleges and universities -- some of them have jumped on the MOOC bandwagon, if you will, but students, at least in this year's data, haven't done so," Eagan said. "They're still having the expectation that they're going to have face-to-face interaction in a brick-and-mortar classroom with their faculty."

Of course, expectations don't always line up with reality, as some former entering freshmen have realized. In the prior year's survey, 84 percent of those surveyed said they thought they could graduate in four years, even though roughly 50 percent actually do, Eagan said. ■

STRATEGIES FOR THE SMALL

By Carl Straumsheim

Forget massive open online courses and online degree offerings. For the smallest colleges out there, a successful online education strategy can sometimes be as simple as email.

Liberal arts college, 161, seeks scalable, highly customizable online education solution. Must like Socratic method, small group settings. Let's enjoy Great Books together.

Shimer College in Chicago, where classes of about a dozen students and an instructor pore over Great Books, in 2013-14 started pilot efforts of as many different technologies as possible in an attempt to create an all-online version of its discussion-based classroom. While Shimer students "have their noses in old fashioned books," President Susan E. Henking said, they "go out into a world that's digital" -- and the college has a responsibility to prepare them.

Small, private colleges are generally the least likely institutions to consider online education, and a 2014 study found colleges without any online offerings are also growing more negative toward the medium. Yet the minimal interest in online education isn't always motivated by hostility; some of the smallest institutions simply see it as irreconcilable with their mission statements.

"Deep Springs has no plans whatever to take any instruction online," said David Neidorf, president of the all-male, two-year college in rural California, where roughly two dozen students combine studies with ranch duties. "But not even that fact reflects any judgment about online instruction. It's just that our program combines academics with involvement with democratic governance of both the institution and student life, and a labor program that embodies direct material responsibility for ongoing community life. As long as that's what we do -- and for the foreseeable future it's the only thing we want to do -- it's impossible to imagine developing an online version."

Ranching isn't the only experience technology has so far been unable to recreate. Institutions such as Thomas Aquinas College, another Great Books institution, have yet to find technology that replicates the classroom experience -- let alone everything that happens outside it.

"If there were technology available that could closely approximate the interpersonal dimension of conversations, I think it would be something we could probably look at," Michael F. McLean, the college's president. "But for us, the community aspect and the ability to develop a real and meaningful friendship is an important part of education in our judgment. That, I think, will always be our priority and primary focus."

Shimer is trying to solve at least the classroom portion of the challenges defined by McLean. The college's list of pilots includes online classroom software from

2U and videoconferencing through Adobe Connect, and also social reading tools that share comments and marginalia between students. The right technology for Shimer -- if it exists -- could be rolled out this summer, but Henking compared the ed-tech experiments to car shopping. “When you go look at cars, every single car is perfect except for one thing,” she said.

Regardless of what students and faculty members conclude, Shimer has committed not to grow to more than 300 students from the current 150. Instead of outgrowing itself, Henking said, the college wants to take advantage of its size.

“I actually think we’re trying to go to a place where small colleges have not gone before,” Henking said. “In some sense, we’re trying to resist the idea that the whole point of technology is ‘bigger.’ Sometimes it’s also ‘deeper.’ ”

‘An Enhanced Experience’

Small colleges such as Shimer, Thomas Aquinas and Deep Springs have carved out niches in the higher education landscape, and perhaps as a result, their online education strategies are equally personalized. Among the colleges that offer some form of online education, the use of technology often targets a specific need.

Eugene Lang College of the New School has for the last two years partnered with Global Citizen Year, a gap year program similar to the Peace Corps where students spend an academic year doing community-based work in countries such as Brazil, Equador and Senegal. Students, if accepted to both, earn a freshman year’s worth of academic credit while abroad.

Stephanie P. Browner, dean of the college, described the experience as a freshman seminar on globalization. Students spend about a week on campus before and after their trip, and Browner visits them a little past the halfway point. The rest of the year is limited by students’ internet connections. Some may be able to access the Canvas learning management system or even videoconference using Skype, Browner said, but in many cases, students only have the bandwidth to email back and forth.

“It does raise the question: Am I replicating the Lang experience?” Browner said. “In some ways, I would say I am. I’m replicating and honoring the values of Lang -- the engagement, the liberal arts education that connects you to the world and helps you think and act well in the world. In some ways, you could say it’s an enhanced experience.”

The program has six students this year, and Browner said she hopes half of every incoming class will in the future spend freshman year abroad.

“I would say what I’m doing right is using online to make possible something that would have been impossible,” Browner said. “What we now have is diversity of place in our online classroom. What does that mean, and how can we use it?”

Successful at Being Small

If Shimer finds the right technology and answers questions

related to assessment and methodology, the next step may be to help other small institutions do the same. Henking said she has entered into "very preliminary conversations" with a handful of other small colleges -- including Eugene Lang -- to gauge the interest in such a network.

"There are a lot of institutions that have 500 or fewer students, and there's not a clear organization of them," Henking said. "Having a network where we can do some things together without homogenizing us could help."

The meetings would respect the diversity among the institutions' mission statements, Henking said, and the fact that "we vary on the political spectrum from somewhere to the right of the tea party to somewhere to the left of Trotsky." In other words, the meetings would be an opportunity for leaders of small colleges to discuss how to be successful at being small -- and if technology can help.

"There's a story out there that says how large you have to be sustainable," Henking said. "On the one hand, we may not deserve to survive -- it may not be possible to survive -- but we're also very significant to the diversity of higher education.

"Intellectually, I could see arguments why the truly tiny should not exist. On the other hand, what happens when you lose whole genres? I think technology can have two kinds of consequences: It's homogenizing some things and wildly diversifying others." ■

ONE COURSE, THREE FLAVORS

By Carl Straumsheim

Students in Harvard University's introductory computer science course face a choice of what they earn upon completion: a certificate, a $350 voucher or academic credit.

Harvard University in spring 2014 offered three versions of its Introduction to Computer Science course, each with its own level of rigor and student-instructor interactivity. With a paid option that offers students a discount toward future studies at the university, the course represents yet another attempt to find a sustainable business model for massive open online courses.

The course can be taken for no academic credit as a free, self-paced MOOC through HarvardX, the university's branch of edX, and also as a credit-granting online course through the Harvard Extension School for $2,050. The school is also offering a third path that blends the flexibility of the HarvardX course with biweekly, online office hours with the senior lecturer David J. Malan, and a discussion forum moderated by teaching fellows. That hybrid option, which costs $350, can be completed for an official certificate, and the cost is returned in the form of a discount on a future course

through the Extension School or Summer School.

A spokeswoman for the Extension School declined to speak on the record about the course, stressing that the experiment is one faculty member's idea to rethink his course. Yet a spokesman for HarvardX described the course as a "pretty ambitious revenue experiment" that shows "the ways that MOOCs continue to expand [and] surprise us."

The Extension School provided preliminary data about the popularity of each version, which suggest the $350 option is not cutting into demand for the credit-granting course. The free version of the course, CS50x, has, not surprisingly, attracted the most students -- more than 174,000, according to Malan. About 100 students have signed up for the traditional online course, CSCI E-50, and another 100 for the hybrid certificate granting option. Students have until Feb. 3 and April 4, respectively, to register for the paid versions of the course. (should we cut this reference now, rather than try to figure out how many students signed up by then? or do we leave it in and just know that there are going to be things that don't quite compute in older stories like this? dl)

Apart from a reference to it on the HarvardX page, the $350 certificate option has yet to be advertised. A spokeswoman said the university will do some "light

marketing" in the weeks before registration closes.

Despite the apparently popularity of the hybrid option, chatter on social media suggests some students are unsure of the worth of a certificate from the Extension School. Several members of course's official community on the social network Reddit, for example, said they were torn between completing the course for a free edX honor code certificate and paying the $350.

"I have been very tempted to shell out the $350 and get a more worthy certificate, however, I'm wondering how beneficial the certificate would be in the real world," one user wrote.

"I figured it looks more authentic/unique and will be good to have when applying to universities," another user wrote.

Of course, it won't be until later this spring until Harvard can determine whether a $350 discount is enough of an incentive for students to sign up for a credit-granting online course, which would cost an additional $720 to $1,750.

Lowering Barriers in St. Louis

Independently from Harvard's efforts, a St. Louis-based nonprofit called LaunchCode will use the free version of the course in an ongoing effort to bring more qualified programmers to the region -- the latest case in a recent trend of using MOOCs for corporate training. Students in St. Louis will meet twice a week for three months to watch the prerecorded lectures and study in groups.

LaunchCode connects job seekers in the St. Louis area with companies that offer apprenticeships or on-the-job training. The course adds another step to that process, said Zach Lou, a LaunchCode volunteer, as it is aimed at those who may need more formal training.

"The class itself isn't a prerequisite, but we think that it's a really good barometer," Lou said. "If you can pass this class ... we think you can be at that level where we can then place you in an apprenticeship."

LaunchCode has also recruited programmers from the community to serve as mentors during the sessions. "People who take this course lose motivation because there's no deadline and no people holding them accountable," Lou said. "We're providing a structured classroom setting, and also some mentorship and peer accountability."

LaunchCode received more than 450 applications after less than a week of advertising the sessions. Not long after, the application pool had more than doubled. The rush of interest took the organizers by surprise -- they had booked a 300-seat auditorium in the St. Louis Public Library, but were forced to move to the Peabody Opera House to accommodate the roughly 800 aspiring coders who showed up. The class will return to the library for the remaining sessions, with spillover seating in two other locations.

Lou said LaunchCode was founded to lower the barriers to employment for people who may not have the skills human resource managers are searching for listed on their resumes, and although some of their programmers fall into that category, "the larger cohort of people have some grasp of programming but haven't really had ... the best education in terms of what skills they're in demand for in the workforce. Maybe it's just that the various barriers of entry are not only on the job site, but maybe in what people need to know." ■

MIXED SIGNALS

By Carl Straumsheim

In two separate analyses, researchers cast doubt about claims made by Purdue on the impact of its early-warning system on retention.

Purdue University has for years touted the ability of its early-warning system Signals to improve student retention, but a series of blog entries analyzing the institution's claims has not found a causal connection between students who use the system and their tendency to stick with their studies.

Purdue's method of structuring its early warning system has permeated the industry, and research invalidating its results could have sent shockwaves through its competitors. The university's approach is not being called into question, however, only its claims to boost retention -- which, on one hand, is likely to come as a relief to the many software providers that have attempted to recreate what Signals does. On the other hand, the rationale given by many for using such early-warning systems is in fact to improve retention.

Signals combines demographic information with online engagement and produces a red, yellow or green light to show students how well they are doing in their courses -- and provides that information to their professors so they can provide help to students before they drop or fail. Ellucian, which provides administrative software, sells it as the commercial product Course Signals, while educational software providers Blackboard and Desire2Learn offer many of the same features through Retention Center and Student Success System, respectively.

Michael Caulfield, director of blended and networked learning at Washington State University at Vancouver, decided to take a closer look at Signals after Purdue in a September 2013 press release claimed taking two Signals-enabled courses increased students' six-year graduation rate by 21.48 percent. Caulfield described Purdue research scientist Matt Pistilli's statement that "two courses is the magic number" as "maddening."

Comparing the retention rates of the 2007 and 2009 cohorts, Caulfield suggested much of what Purdue described as data analysis just measured how many courses students took. As Signals in 2008 left its pilot and more students across campus enrolled in at least one such course, Caulfield found the retention effect "disappeared completely."

Put another way, "students are taking more ... Signals courses because they persist, rather than persisting because they are taking more Signals courses," Caulfield wrote.

Caulfield's findings were in 2013 corroborated by Alfred Essa, McGraw-Hill Education's

vice president of research and development and analytics, who wrote a simulation that substituted "received a piece of chocolate" for "took a Signals-enabled class."

"The simulation data shows us that the retention gain for students is not a real gain (i.e., causal) but an artifact of the simple fact that students who stay longer in college are more likely to receive more chocolates," Essa concluded. "So, the answer to the question we started off with is 'No.' You can't improve retention rates by giving students chocolates."

Essa helped design the Student Success System as a strategy director for Desire2Learn, but said it and other products that have been inspired by Signals don't face an existential crisis.

"The aim of these early warning alert systems at the course level is just to make sure that students are performing well," Essa said. "It's a huge leap to go from that and say, 'Oh, and we're also going to improve your retention rates directly.' "

Pistilli defended the claims about Signals' ability to increase retention -- with the caveat that more research needs to be done. "The analysis that we did was just a straightforward analysis of retention rates," he said. "There's nothing else to it."

"THE AIM OF THESE EARLY WARNING ALERT SYSTEMS AT THE COURSE LEVEL IS JUST TO MAKE SURE THAT STUDENTS ARE PERFORMING WELL."

To ensure an empirically grounded analysis of Signals, Essa urged Purdue to give researchers access to as much data as possible. Pistilli said he is open to participate in that conversation, but pointed out that granting open access could violate students' privacy rights.

With Signals marking its fifth anniversary, Pistilli said "it was probably just a matter of time for people to start looking for these pieces and begin to draw conclusions." In that sense, the discussion about early warning systems resembles that of other ed-tech innovations, like flipping the classroom and massive open online courses, where hype drowns out any serious criticism.

"I think part of the answer is we're really bad at statistical reasoning," Essa said. "Even experts get tripped up by statistics, and it's very easy to make claims like this, but it's difficult to dig in and try to make sense of it."

He added, "Maybe one of the conclusions that could be derived from this is that we really don't have a strong community to test and validate these claims? Maybe that's really the starting point of discussion in the academic community. As we move forward with new technologies in learning analytics, how and who will be evaluating the claims that people put forward?" ▪

STILL IN FAVOR OF THE FLIP

By Carl Straumsheim

Despite a seemingly critical new study, the debate about flipping the classroom still tends to favor those in support

Go ahead and postpone the conversation about the backlash against the flipped classroom model. Supporters and skeptics alike -- and even the researchers behind a seemingly critical new report -- say the discussion continues to be positive.

Flipping the classroom -- the practice of giving students access to lectures before they come to class and using class time for more engaging activities -- hasn't been nearly as divisive as many other ed tech trends, such as massive open online courses or outsourcing digital services. So when USA Today in late 2013 reported on an experiment at Harvey Mudd College that had failed to improve student outcomes, it provided a rare contrast.

Some students "said they felt the flipped classroom had a heavier workload," and professors "had to spend considerably more time making and editing ... videos and crafting engaging, hands-on sessions for their classes." A comparison between the flipped classrooms and their traditional counterparts found "no demonstrable difference" in student outcomes. The researchers, the newspaper wrote, "have bad news for advocates of the trend: it might not make any difference."

The study could have fit into a growing body of research calling the science behind flipping the classroom into question. Days later, however, the researchers behind the study said their results and words had been misinterpreted.

Yes, the article did point out that the results were preliminary -- twice in one sentence, even -- but the headline (" 'Flipped classrooms' may not have any impact on learning") and hook drew too many conclusions about a study that is set to continue for another three years, they said.

The researchers -- Karl Haushalter, Nancy Lape, Rachel Levy and Darryl Yong – in 2012 taught both the flipped and traditional sections of the courses, all of which were in the science, technology, engineering and math (or STEM) fields. They declined to be interviewed for this article, but explained their side of the situation in a social media post after the article was scrutinized by higher education consultant Phil Hill.

"There could be an argument that this article is a case of a reporter trying to find a sensational topic from a nuanced report," Hill wrote. "But the real problems in this article seem to be direct quotes from one of the research professors, despite the qualifier of 'preliminary.' "

Yong warned "that we should be cautious about extrapolating our experience here to other contexts."

Harvey Mudd's roughly 800 undergraduates "already spend a lot of time working together in groups in and out of class," and the college's size means there are few of the large lectures that the flipped classroom model aims to supplant.

"Our goal is to better understand the conditions under which flipped classrooms lead to better student outcomes," Yong wrote. "[G]iven our study design and Mudd context, we have not yet seen any difference in student outcomes. Of course, this was only the first year of the study and we are admittedly working out all of the kinks in our flipped classes."

Widespread Support

More college and universities are growing comfortable with the idea of recording lectures and making them available online. According to data compiled by the Campus Computing Project, more than two-thirds of institutions see lecture capture as an important tool to deliver instructional content. That share has grown steadily in the past few years.

The widespread support may be why Jonathan Bergmann and Aaron Sams, two of the earliest advocates of the flipped teaching model, said they have not seen a recent surge in criticism. Bergmann called the study out of Harvey Mudd an outlier.

"They're saying they're still in the early stages," Bergmann said. "Most people who have done this have seen positive -- and in some case dramatically positive -- results." In one such example, Mike Garver, a professor at Central Michigan University, flipped his classroom and "noticed a huge increase in the number of students earning top marks on his (admittedly) toughest test."

Bergmann and Sams co-wrote the book Flip Your Classroom: Reach Every Student in Every Class Every Day, which some credit with starting the flipped classroom trend. Today, they serve on the board of the Flipped

Learning Network.

Criticism of the flipped classroom model usually stems from arguments between the didactic and progressive camps within higher education, Bergmann said. Members of the didactic camp oppose flipping the classroom to preserve the role of the lecturer, while the progressive camp instead advocates for a move toward project-based learning and inquiry. "That's where I'm seeing the rub," he said.

There's also the knee-jerk reaction to something new. Students in flipped classroom can no longer expect to sit through a lecture and complete work on their own time. When coupled with challenging course material and a shaky internet connection, the change has led many to voice their frustration on social media.

The same goes for professors, who can no longer expect to give 90-minute presentations. The extra work that goes into recording videos and planning classroom session has led many faculty members to report an exhausting first year of flipping the classroom.

"Change is a process," Bergmann said. "By year three it's culture."

Even Gary Stager, an education speaker and consultant who has been one of the most vocal opponents of the flipped classroom model, could not point to an intensified debate.

"My first inclination is that when anything becomes that popular, you should be suspicious of it," Stager said. "In my experience, bad ideas are timeless. In education, good ideas are incredibly fragile. I'm not so optimistic there's going to be a big backlash."

Other critics, like Ian Bogost, a professor at the Georgia Institute of Technology who placed himself in the "cautiously cautious" camp on flipped classrooms, said the model is only one of many factors in the larger debate about technology-based educational reform.

"It's not the flipped classroom specifically," Bogost, a game designer and professor in the School of Literature, Media and Communication, said. "It's kind of the evolving anxiety involved with ... the operation and ownership of institutions."

Bogost, who has written critically about flipped classrooms, said experiments such at the one at Harvey Mudd could provide valuable data to determine the effectiveness of larger online courses. "There is reason to believe that continued investment in even the local, non-scaled, modest version of flipped classrooms will at the end of the day benefit these MOOC-like solutions because they will provide evidence and fodder and materials in general," he said.

Stager agreed, saying institutions will continue to experiment with flipping the classroom as long as there is a promise of reduced costs. "I suspect that people who have been cheerleading it without evidence will continue to do so," he said. "There will be academics who continue to demonstrate that it's ineffective. The question nobody asks is 'Where's the bibliography?' "

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